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DENVER PC BOARDWATCH

NEWSLETTER FOR ELECTRONIC BULLETIN BOARDS AND ON-LINE SERVICES

Editor: Jack Rickard Volume II: Issue 9 ISSN: 0894-5209 October 1988

TELE-BITS

THE BBS LIST

This month **Denver PC Boardwatch** presents a list of **196** bulletin boards/on-line services available in area code **303** - see page **12**. A total of **10** Bulletin Board Systems (**BBS**) were deleted from the September list with **8** additions. Each number is verified by actual telephone contact within the **30** days preceding publication. Additions and major changes to the list are highlighted in bold-face type. Corrections may be addressed via the **Denver PC Boardwatch** Echomail Conference, by Fidonet Mail addressed to **JACK RICKARD** via Net **104** Node **555** at **(303)973-4222**, **JACK.RICKARD** on the General Electric **GEnie** information service, **BOARDWATCH** on the new **1-976-GEIS** service or **71471,561** on Compuserve.

BBS FILES SUIT AGAINST CALLER

Bill Christison, system operator for the **Santa Fe Message BBS (505)988-5867**, filed suit August **12** in the US District Court of New Mexico against one of his callers, Michael Dagg AKA Carter Pruett. In the suit, Mr. Chrisitison claims Dagg uploaded a trojan horse program titled **BBSMON.COM** to his system on May **4** and again on May **7**. The program, purporting to be a useful utility, actually erases **DOS** and scrambles the hard disk file allocation table - effectively erasing all data on the drive. Mr. Christison tested the program before making it available for download and discovered the damaging software. Contrary to some reports appearing in the popular press and on at least one commercial online service, the program exhibited no "**viral**" characteristics. It was a simple trojan horse program. We're still unable to locate a single instance of a true viral program. Mr Christison is seeking **$1000** damages for each upload, litigation costs and attorney's fees, and an order barring Mr. Dagg from uploading such software to other systems. Apparently Mr. Dagg called the system under his own name as well as the alias Carter Pruett. Mr. Christison's system offers skiing and tourism information on Northern New Mexico and runs on BBS software titled **R**emote **O**perating **S**ystem (**ROS**).

HAYES DEEPENS SYSOP DISCOUNT PROGRAM

Hayes Microcomputer Products has announced a startling reduction in the price of their **Hayes V-Series 9600 bps** (**b**its-**p**er-**s**econd) modems between now and **October 29, 1988**. In our July issue we reported Hayes offered a discount from the normal **$1299** list to a more attractive **$655** for qualifying BBS system operators. We also noted that US Robotics had virtually locked up the BBS market by discounting their **9600** bps unit to **$505**. Apparently Hayes has taken note because they've cut the price of the **Hayes V-Series 9600** bps model a full **70%** off list to a very attractive **$400** to sysops. Each qualifying sysop may purchase up to four modems at the reduced price. Locally, **18** BBS feature **9600** bps operation with **16** using the US Robotics model and two sporting the Microcom model. Hayes hopes to reverse this trend nationwide with the new program. The V-Series was first introduced in June, **1987**.

The **9600** bps market has featured a variety of vendors up to this point and a major problem for consumers. The only available "standard" for **9600** bps operation is the **CCITT** (**C**omite **C**onsultatif **I**nternational **T**elegraphique et **T**elephonique) **V.32** full duplex standard. Unfortunately, the technology to implement **V.32** is extremely expensive. Hayes offers a **V.32** Hayes Smartmodem **9600** at **$1995** for example. US Robotics, Microcom, Telebit, and Hayes all offer half-duplex modems in the **$1000** range. Unfortunately, none of these **9600** bps units can communicate with each other at the **9600** speed. The **9600** operation only works between modems of the same manufacture. To "cross connect", the modems must fall back to **2400** bps where a common standard already exists.

The vendors are gradually working toward unity. The **CCITT V.42** error correction standard for half-duplex modems is scheduled for signature in **Australia** during **October 1988.** This standard should provide a partial fix for the problem although it leaves several important elements up in the air. The Hayes **L**ink **A**ccess **P**rotocol - **B**alanced (**LAP-B**) and the **M**icrocom **N**etworking **P**rotocol (**MNP**) classes **2** through **4** will both be incorporated in **V.42** as error correction standards. And both companies have promised full implementation of **V.42** in their future products. But **V.42** leaves the question of **9600** bps modulation unresolved. The probability of Microcom and Hayes modems actually being able to converse with each other soon at **9600** bps is remote.

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Likewise, US Robotics and Hayes have reached some preliminary cross license agreements. But it could very likely be several years before a common **9600** bps capability comes of this either.

John Aitken is sysop project coordinator. Hayes Microcomputer Products, PO Box 105203, Atlanta, GA 30348; **(404)441-1617**

US WEST WINS ISDN CONTRACT
US West Information Systems Inc., beat out such notables as AT&T, IBM, GTE, BellSouth, and Contel to win a **$17** million **University of Arizona** installation contract for both a campus-wide fiber-optic data network and a **17,200** line **ISDN** (**I**ntegrated **S**ervices **D**igital **N**etwork) system. A total of **84** of the **117** on-campus buildings will be linked by over **38,000** feet of fiber-optic cable linking scores of existing Ethernet **LAN** systems. The campus currently supports dozens of mini and mainframe computers and over **4000** PCs. The system should be operational in **1990**.

IBM TECHNICAL DIRECTORY
IBM has published a **FREE** technical directory listing over **100** available technical publications covering IBM hardware and software products. To obtain a copy, dial their toll-free Books and Special Products hotline at **(800)426-7282**.

AUTOMATED TELLER MACHINES
According to John Love, publisher of Bank Network News, there are currently **72,000 ATM**s in service worldwide. Both **CIRRUS** and **PLUS** systems sport over **20,000** machines each.

TELENET BUYS MICROCOM MODEMS
Telenet Communications recently purchased over **2000 Microcom AX/9624c** modems for use in its popular packet switched data network. The **AX/9624c** supports Microcom's **MNP** (**M**icrocom **N**etworking **P**rotocol) to **Class 6**. **Class 6** operation includes data compression to produce an effective throughput of **19,200** bps. The modems are scheduled for installation in **24** cities.

FAX FEATURES RS-232 PORT
The market for **FAX** machines has gone wild with current predictions of over **1** million unit sales for **1988**. **FAX** cards for PCs have also been all the rage recently. But without a scanner and laser printer, they can't compete with the convenience of dialing a telephone, sliding in a piece of paper, and having a very nearly identical copy slide out of another machine **1000** miles away. Still, the PC can edit text and it is at times nice to simply send a message to someone who owns a fax rather than an E-Mail address. Murata Business Systems has bridged this feature gap by offering a standard **FAX** machine, their model **F50** (**$3595**), and an **RS-232** interface device, the **F**acsimile **I**nterface **P**rocessor (**FIP**). The **FIP** lists for **$995**. The **FAX** provides **1 MB** of memory to hold up to **60** pages. The PC can pass data to, or retrieve images from the **FAX** memory. Murata Business Systems, 4801 Spring Valley Rd., Bldg 108B, Dallas, TX 75244;**(214)392-1622**.

XEROX TO RELEASE VENTURA PUBLISHER 2.0
Xerox Corporation of Stanford Connecticutt, released two new versions of its immensely popular desktop publishing package **VENTURA PUBLISHER**. The program has become the standard desktop publishing package for IBM PC compatible computers and many print shops around the country offer Ventura support and laser printing services.

The new version **2.0** offers support for the Lotus/Intel/Microsoft Expanded Memory specification which should eliminate the frequent **NOT ENOUGH MEMORY** error that often requires users to break large tables into smaller segments. On the downside, some early testers report that the program is a memory hog of the **1.5-4.0 MB** variety. The product will be able to import dBase and Lotus 123 files directly and it's rumored that both Microsoft Windows and the current **GEM** interface will be offered. Horizontal and vertical centering and vertical justification are provided in the new release and it supports both **EGA** and **VGA** graphic standards. Page rotation in **90** degree increments is also provided. A version of **2.0** will also be released to support Local **A**rea **N**etwork (**LAN**) operation. The greatest rumored addition we think is the new context sensitive help feature. Xerox Software Product Center, 1301 Ridgeview Dr., LV179, Lewisville, TX 75057; **(800)822-8221.**

FINANCIAL NEWS NETWORK INTERFACE
One of the real success stories of cable television is **F**inancial **N**ews **N**etwork. **FNN** has developed a loyal following among investors with its business news and stories. An unusual and appropriate feature of this channel is a two-line blue "ticker" ribbon running across the bottom of the screen throughout the broadcast. This ticker looks like a stream of Martian Hieroglyphics to the uninitiated but it actually represents stock exchange transactions that occurred some **15** minutes previously. CableSoft, Inc., of Fairfield Iowa, has developed an ingenious expansion card for IBM compatible computers that actually demodulates the transmitted TV signal, plucks the data from the **NTSC** video signal, converts it to **ASCII** text, and then uses it with one of the best little portfolio management programs we've seen anywhere.

Essentially, you plug an adapter between the cable and your TV converter. The card itself has a jumper to select from three channel bands covering the **107**

channel cable spectrum. The card is intelligent enough to actually locate the channel carrying **FNN** within the proper band.

Once operating, the portfolio manager can track multiple portfolios each containing up to **500** stocks. The software assembles data on high, low, average, volume, etc. on each stock by snagging the data from the ticker stream as it comes in. The package features impressive trendline and graphing features and even displays the ticker itself across the bottom of the screen either with full data or displaying just those stocks you have selected in your portfolio.

The entire package is titled **LiveWire** and it prices out at **$995.** With the **X*PRESS EXECUTIVE** service offering similar utility via cable for around **$225** plus **$19.95** per month (**Denver PC Boardwatch,** August, **1988**), we find the **$995** tag on this card a skoshe pricey. But we can't help but be delighted with the innovative technical cunning of this product. Once their initial product introduction euphoria wanes and they bring their admission price down to levels appropriate for earthlings, we think this group faces a very bright future. How about a card to grab **NFL** scores and highlights off of old **I Love Lucy** re-runs? **A LiveWire** demo disk is available for **$10.** CableSoft, Inc., 307 West Burlington Ave., Fairfield, Iowa 52556; **(515)472-8393.**

INTEL/DCA ANNOUNCE NEW 9600 BPS MODEM/FAX CARD

Intel's Personal Computer Enhancement Operation of Hillsborough Oregon and Digital Communications Associates (**DCA**) of Alpharetta Georgia, have teamed up to produce a communications card for IBM compatible PCs that many feel will become the new communications standard device. The product is actually a combination of hardware, software, and a published communications specification titled Communicating Applications Specification (**CAS**)

The hardware is termed the **Connection CoProcessor** and consists of a plug in circuit card featuring a **9600** bps modem and a facsimile machine emulator. The card is powered by a **10 MHz 80188** communication coprocessor chip with **256 KB** of **RAM.** This allows the card to run communication tasks in the background - freeing the PC for other tasks. The card also features an Appletalk style connector and a **LAN** networking feature ala **TOPS** is rumored.

Software consists of a **65 KB** memory resident operations program and Zsoft's **PC Paintbrush** software used to view/edit received fax images.

Initially the card will offer **9600** bps binary file transfer (yes, another **9600** bps "standard") and **9600** bps **Group III** facsimile capability. Note that **9600** bps file transfer can only take place between two Intel Connection CoProcessor cards. This is the same morass currently enjoyed by all **9600** bps modem manufacturers. But products planned for the immediate future include a **2400** bps Hayes compatible modem module, and a **3270** emulator function. **DCA** makes the popular **IRMA 3270** emulator now as well as distributing **Crosstalk,** one of the most popular commercial communications software packages.

The **CAS** specification describes an entire topography for communications that allows a variety of devices to plug into the system and, of course, a variety of software. Essentially, the spec makes it easy to incorporate communications in software. The design burden seems to fall on hardware manufacturers to work within the spec. Numerous software heavyweights immediately jumped in behind the new specification including Lotus, Microsoft, Ashton-Tate, Word Perfect, Borland and Novell. The immediate application these software products will incorporate is expected to be a simple facsimile dump. The ability to simply send a Lotus spreadsheet to a fax with a keystroke has obvious and immediate advantages. Ditto E-Mail pounded out on Word Perfect.

The card is initially priced at **$995.** But it incorporates so many current features (**9600** bps files plus fax) and future enhancements such as **3270** emulation and **LAN** connections (a **FAX** port for **LAN**s?) that it just might set a new standard in communications devices.

Intel operates an excellent three-line product information BBS at **(503)645-6275.** Intel Corporation, 5200 NE Elam Young Parkway, Hillsborough, OR 97124; **(800)538-3373** voice.

HARPERS MAGAZINE reports several statistical items of note. It appears there are approximately **1300** Kiwanis club meetings held each businessday in the United States. We can't help but wonder who caters these things. Further, Americans work approximately **54** acres of crossword puzzles daily - we're looking for a five-letter Yiddish word meaning "you don't say". A total of **39** twelve-fingered Amish dwarfs reside in Lancaster County, Pennsylvannia and there have been **31** documented cases of toothbrush swallowing in medical literature with **4** of these occurring in the Durham, North Carolina area alone. This is the kind of detailed statistical information we live for. Harper's Magazine, PO Box 1937, Marion, OH 43305; **(614)383-3141.**

DOS 4.0 - A FAT OF A DIFFERENT COLOR

In an earlier issue, we had mentioned the new **DOS 4.0** IBM released this past July. One of the endearing features of this release was the virtually unlimited hard drive capacity it allowed versus the **32 MB** limit imposed in **DOS 3.3**. This was done by expanding the File Allocation Table (**FAT**) format. For all practical purposes, this allows virtually unlimited disk drive sizes. Unfortunately, this makes any utility software that modifies or uses the **FAT** obsolete overnight. Further, **DOS 4.0** has a few other problems. It will install most readily over IBM's own **PC-DOS** version **3.3**. But if you try to install it on a clone computer using **MS-DOS**, or even an IBM computer running **MS-DOS**, you'll get the error message **UNRECOVERABLE ERROR**. You must completely reformat your hard drive to install it. Further, it appears to have some major problems with the **LOTUS/INTEL/MICROSOFT** Expanded Memory Specification (**EMS**) to the point that it will bring the machine to a HALT. Finally, **DOS 4.0** seems to have difficulty with a broad array of **TSR** (Terminate and Stay Resident) programs. Consider waiting for **DOS 4.1** which should be out very soon. IBM has a new referral telephone service in Emporia Illinois at **(800)447-4700**. This number is apparently an external company that acts as a telephone directory for IBM.

KERMIT 2.31 ANNOUNCED

Many mainframe communications ports allow only **7**-bit data bytes to pass with the eigth bit used for control purposes. Almost all microcomputer communications are based on a full **8**-bit data byte. To allow file exchange between mainframe and micro computers, some enterprising gents at Columbia University created a file transfer protocol titled after a frog and released it into the public domain several years ago. The protocol was termed **KERMIT**, after the frog, and still enjoys immense popularity in that environment. Version **2.31** of the program is now released and it features a script language for the very first time. Improved user documentation also helps the package. The protocol is actually available for a number of different machines. A version for the IBM PC is available for **$20** from **KERMIT**, Columbia University Center for Computing Activities, 612 West 115th Street, New York, NY 10025; **(212)280-3703**.

US WEST LOCAL CALLING AREA PLAN HEARINGS

US West/Mountain Bell has proposed a new tariff that will affect almost every telephone subscriber in the state of Colorado. The new Local Calling Area Plan establishes a new rate structure based on both time and geography. Geographically, you will have access to one of three zones via a local call. Calls outside the zone will be charged at a toll rate of approximately **3** to **5** cents per minute. The smallest zone is the cheapest of course with the largest zone being the most expensive. The new plan also calls for four different time rates including measured service, **6**-hour monthly, **12**-hour monthly, and unlimited calling. This provides a matrix of **12** completely confusing options for the average subscriber to agonize over. In fact, even US West representatives admit that if you really want to compare your expenses, it would be better if you called and let them calculate it for you. We're a bit uncomfortable with that approach.

Most subscribers currently enjoy one local calling area and unlimited dialing. To retain this, you would want to opt for **Zone C coverage and unlimited dialing. Zone C**, the largest of the three geographical options, will in all cases give you as much coverage as you now have, and in some cases you may actually be able to place a local call to a few obscure small towns previously billed long distance. Opting for **Zone C** unlimited dialing will raise the average residential customer's telephone bill about **$1.66** per month. Businesses may get hit a little harder - roughly **$5** monthly. The current battle looms over whether callers who do not specify a zone/time choice will default to the newer, more expensive **Zone C**/unlimited or whether they will fall into a smaller zone to maintain their current billing rate.

The entire tariff has been presented to the Public Utilities Commission and if approved would go into effect sometime in **1989** or **1990**. Before it rules, the **PUC** has set up some public hearings on the matter where you can go and voice your objections/concerns. US West representatives will be on hand to answer questions. Because of typically low public participation in these hearings, a sparse handful of interested citizens can have an enormous impact on the final decision. Hearings will be held in coming weeks according to the following schedule:

TARIFF HEARING DATES

DATE	LOCATION	TIME
9/19 Denver	PUC Hearing Room B	3:00 PM
9/28 Boulder	National. Bureau of Stds	5:00 PM
10/5 Aurora	Eagle Crest High School	5:00 PM
10/6 Lamar	County Courthouse	11:00 AM
10/6 Alamosa	Adams State College	5:00 PM
10/7 Grand Junct	Mesa State College	11:00 AM
10/7 Col Springs	City Council Chambers	5:00 PM
10/12 Granby	Community Center	5:00 PM
10/13 Lakewood	Municipal Center	5:00 PM

When the long distance game was deregulated, it too became a hopeless tangle of rates and discounts. Most consumers simply opted for AT&T, largely recognized as the most expensive but also most familiar service, rather than go through a complex analysis of calling patterns, rates, and frill services. We think the **LCAP** is similarly complex by design hoping for the same default type of response. If successful, it would result in a modest rate increase for everyone. More onerously, it closely resembles some of the first steps taken to the zoned local calling nightmares currently in place in a few cities such as San Francisco. These tariffs have proven very profitable for the Local Bell Operating Companies that have managed to enact them and generally very expensive for the subscribers living in zoned cities.

Whatever your stand on this issue, we urge you to attend one of these hearings and speak your mind. Let's not let this tariff be enacted through the usual apathy and lack of public participation that lends tacit approval to most such requests.

ADA HISTORY

The **ADA** programming language is playing an increasingly important role in any defense contract work. The program was originally developed as a weapons tracking system control language by a contract team headed by Jean Ichbiah. It was modeled after Nicholas Wirth's Pascal language in structure. In fact, the similarity carries over even to the name. Wirth named Pascal after **Blaise Pascal,** a French mathematician who developed a calculating machine in **1640**. **ADA** was named after lady **Ada** Augusta, the Countess of Lovelace. While this may not appear to hold any parallels, Lady Lovelace served as an assistant to mathematician **Charles Babbage (1791-1871)** who struggled with development of calculating engines most of his life. His later work employed punched cards for sequence control after the fashion of the Jacquard loom. While popular computer lore would attribute this as the first stored program calculating machine, the cards actually only carried sequencing information and would not normally be considered as following the stored-program principle. Further, none of Mr. Babbages machines ever actually worked with the exception of a difference engine actually built by George and Edward Scheutz - employing Babbages theories.

Most other computer languages are some form of acronym. Some examples:

FORTRAN	**FOR**mula **TRAN**slator
ALGOL	**ALGO**rithmic Language
APL	**A** Programming Language
COBOL	**CO**mmon **B**usiness **O**riented Language
RPG	**R**eport **P**rogram **G**enerator
BASIC	**B**eginner's **A**ll-purpose **S**ymbolic **I**nstruction **C**ode
LISP	**LIS**t **P**rocessor
SNOBOL	**S**tri**N**g **O**riented Sym**BOL**ic Language
PROLOG	**PRO**gramming **LOG**ic
C	A successor to **B**.

SOCIAL SECURITY NUMBER

On Friday, August **5, 1988,** the Social Security Administration announced a new toll-free telephone number at **(800)937-2000**. The number was set up to allow callers to request a copy of the new **SSA-7004** form. This form allows you to request a detail accounting of your social security account including an estimate of your pension benefits upon retirement.

To handle the calls, **SSA** employed an automated system they were told would handle **10,000** calls hourly. Unfortunately, once under load, the system actually handled about **2500** callers hourly. As a result, telephone circuits throughout the nation were literally jammed for hours. Many local switching offices installed temporary blocks to prevent the calls from even being switched.

By mid-month, **SSA** had added an additional **16** telephone lines, doubling capacity, and call demand had slackened to manageable levels. By the time you read this, you should be able to get through with no problem. Social Security Administration spokesmen claimed the reason the system didn't handle the projected **10,000** calls hourly was that the users were confused and slowed things down. Right.....

BBS SOFTWARE CONNECTS DOS MACHINES TO UNIX NETWORK

Software Concepts Design offers a BBS software program titled **RamNet**. The program is a memory resident communications package allowing upload/download operations to occur in the background. The program also allows you to run a BBS with a powerful RamNet mail network. Most notably, RamNet allows your PC to act as a **TELEX** terminal to receive messages from this aging, but still active message system. Further, RamNet allows **MS-DOS** machines to participate in mail and file exchanges with the popular **UNIX** based **UUCP** (Unix to Unix **CoPy** - **CP** is the **UNIX** command for **COPY**) network. This is a very popular mail system connecting universities and corporations across the country. It's similar in

many respects to the Fidonet system but until now it's largely been limited to **UNIX** based systems. With RamNet, you could run a **UUCP** node on an **MS-DOS** based IBM PC. The program travels for a competitive **$149**. To see the product in action, try their BBS at **(212)889-6438** (data). Software Concepts Design, 594 Third Ave., New York, NY 10016; **(212)889-6431** (voice).

PC WEEK ONLINE SERVICE

PC WEEK Magazine has been very successful as a weekly tabloid catering primarily to the IBM corporate applications world. The weekly offers some interesting and timely news on connectivity, telephone company developments, and of course, IBM announcements. The magazine intends to inaugurate an online **S**pecial **I**nterest **G**roup (**SIG**) area on the Compuserve network. This online service would allow readers to interact with various columnists for the magazine as well as participate in several forums dedicated to actual business applications.

Magazines are increasingly adopting online services via the existing commercial systems as another avenue of communication with readers. We were somewhat shocked to learn that some of these companies pay as much as **$2500** monthly for a special BBS on Compuserve. Tony Pompili is Editorial Manager for Online Services at PC Week, 800 Boston Street, Boston, MA 02199; **(800)451-1032**.

ORACLE DBMS FOR MACINTOSH

Oracle Coporation of Belmont California has released a version of its popular **ORACLE** Data Base Management System for the Apple Macintosh personal computer. As part of the implementation, Oracle has included **HYPER*SQL**, an upgrade for Apple's Hyper Card Development System that allows Hypercard to interact with Oracle data bases. The program should be available in November 1988. Oracle, 20 Davis Drive, Belmont, CA 94002; **(800)345-3267**.

SINGLE CHIP 9600 BPS MODEMS

Yamaha Corp. of America has announced a modem chip capable of **9600** bps operation in a single-chip modem configuration. The new chip, designated the **YM7109**, is priced at **$95** for a **40**-pin package or **$97** for the **64**-pin package in quantities of **100**. Evaluation copies have been available since September. Yamaha Corporation, 6600 Orangethorpe Ave., Buena Park, CA 90620; **(714)522-9223**.

LOCAL ACCESS

LESLEY COLLEGE BBS

George Willett of Wheatridge Colorado operates a fairly unique BBS system in cooperation with the National Outreach program of Lesley College in Cambridge MA. The system operates on two Apple][e computers tied together with a **20 MB** hard drive. Access at **300** or **1200** bps is provided over two telephone lines available through **(303)233-5824**

The system offers some fairly interesting areas including some good Apple][e programming sections for AppleSoft Basic, Terrapin Logo, and Pascal. The system also offers a number of message areas and the **GBBS Pro** Version **1.4c** software it runs on has obviously been fairly heavily modified.

Like many systems, Mr. Willett is trying to get users to help support his system. A **$10** lifetime membership allows access to the programming and download areas and is a relatively reasonable fee as these things go and you will enjoy relatively good access even without paying the fee. If you're still running an Apple][e computer, this system would likely prove a valuable resource. George Willett, PO Box 5154, Wheatridge, CO 80034.

Lesley College operates a national outreach office in Greeley. Lesley College - National Outreach, 710 11th Ave, Suite L90, Greeley, CO 80631; **(303)353-6502**.

MAGIC BBS

Steve Sande of Highlands Ranch Colorado operates one of the few Macintosh BBS available in the area at **(303)791-8732**. The system operates on a **Macintosh 512K Enhanced** model with a **20 MB** hard drive at up to **2400** bps. The system is titled **MAGIC** from **M**acintosh **A**nd **G**S **I**nformation **C**enter and as you might expect its main raison d'etre is to support Apple Macintosh and GS models.

The system runs on some relatively new Macintosh BBS software titled **NovaLink Version 2.0**. A retail operation, Computer CACHE, helps support the system but a **$15** annual fee is still required and nonscribers are limited to a draconian **15** minutes online with no download priviledges. Even paying subscribers are limited to a single hour daily and the sysop goes on at some length concerning their lack of obligation to provide an up system for any length of time. Correspondence/subscription fee to SanSoft (MAGIC), 892 E. Quail Place, Highlands Ranch, CO 80126

CORNER PUB BBS
Richard Douglas has operated BBS in the Houston area for several years and even dabbled in writing BBS software. Now, he's started a new IBM based system here in Denver at **(303)759-8619**. The system is in the Fidonet as Net **104** node **414** and is titled **THE CORNER PUB**. The system displays a fit and polish unusual in a new BBS, probably due to his past BBS experiences in Texas. For those not familiar with Texas it is relatively easy to find. Go east until you smell it - turn right - and proceed south until you step in it. It's not like you could miss it.

Mr. Douglas expends a good deal of effort in downloading the very latest in Shareware and Public Domain software from national commercial services such as CompuServe and GEnie. This leads to a very current system.

The board features a fairly active **32** message areas. We found some utterly fascinating, useful, and well presented information regarding the SEA/PKWare lawsuit assembled and available here. Mr. Douglas had even logged some GEnie message traffic concerning the lawsuit.

The system requires a **$10** annual fee to help support Mr. Douglas's sojourns into the land of commercial online systems to glean the latest and greatest in software and news - probably a pretty attractive price for what benefits this garners. The idea of having someone screen out the garbage and dig out the pearls from CompuServe and GEnie for $10 annually is a tad attractive all by itself - BBS aside. New callers can feel free to dial in and look around at no charge. We tend to recommend it.

NONAME BBS FINALLY CHRISTENED
Jon and Danielle Johnson inaugurated a BBS early this year using the **MINIHOST BBS** software at **(303)988-5765**. Though small, the system attracted a fairly urbane following early on and the message traffic was always interesting. As a result, the **NoName BBS** system built a large out-of-state following and quickly broached the Minihost user limit with **517** verified users.

This past month, **NoName** was finally christened **Translations Unlimited**. All the old sharware download files and message topics are gone and the system will serve as a resource for Danielle's language translation services.

It seems Danielle served for several years as an attorney in Belgium working with the **N**orth **A**tlantic **T**reaty **O**rganization (**NATO**) and **S**upreme **H**eadquarters of **A**llied **P**owers in **E**urope (**SHAPE**). This work involved not only legal consultations, but given the where and the why of it, also required heavy translation of quite technical documents among the various languages favored by **NATO** members. When she relocated here to the Denver area, she found her Belgian law degree was not recognized in the United States and it would require at least three years of further schooling to resume her career as an attorney. Fortunately, there was some demand for language translations and so Danielle was able to put her skills to use.

The service offers translation of everything from legal and business documents to personal correspondence and family documents between **German, Spanish, Italian, Dutch, Flemish, French,** and **Afrikaans**. The actual handling of documents can be done in person, by US Mail, and of course, by modem. Almost all word processing formats are supported. Most documents up to around **20** pages can be done within a day or two. Prices start at around **$10** for a short personal document and **9-25** cents per word for longer items depending on technical complexity. The system also allows individuals with translation skills to register their specialty. Eventually, such a system could serve as a clearing house for translation services. EFF Services, 255 Zang St., #2538, Lakewood, CO 80228; **(303)980-5735** (voice).

LONG DISTANCE USA

MONTANNA RURAL EDUCATION NET
Dave Hughes began fooling around with modems back in **1979** and could quite safely be viewed as one of the "old men" of the BBS game. He's run the **OLD COLORADO CITY/ROGER'S BAR BBS** in Colorado Springs at **(719)632-3391** and the commercial **CHARIOT COMMUNICATIONS** system at **(719)632-4111** for a number of years. Some say he got a city councilman elected down there with a BBS and his system was mentioned prominently on a McNeil Lehrer report on PBS television a few years ago. More recently, he's garnered some notoriety throughout the country speaking on the subject of personal computer communications and the videotext/online service industry. He speaks not only knowledgeably, but with a very convincing enthusiasm and a populist vision of what this emerging technology can bring to the common man by way of access to enormous varieties and quantities of information. His COMVAN is a rolling communications center with a laptop computer connected to his home system via a packet switched commercial radio system. He can be online and on the road at the same time. Occasionally, his talking leads him into less pleasurable pursuits - such as work. From what we can tell, he must have really fallen into it up in Montanna.

Montanna has a few problems that are largely geographical in nature. It's up north and north gets cold. As a result, there are few people living in Montanna. Despite the sparse population, many of the residents are insistent that their children receive an education under the auspices of the state. Since this is more or less traditional throughout the nation, Montanna has pretty much committed to providing it. The result is a series of **114** one-room school houses, each with an average enrollment of about enough to play basketball during recess - girls allowed.

Despite the obvious logistical problems, and largely due to some pretty dedicated teachers, these schools have done their job - in some cases notably well. A number of unlikely entities seem to have conspired to help them out recently. Apple computer contributed computers and modems to many of these rural schoolhouses. More recently, our own Mr. Hughes and Frank Odasz, Asst. Professor of Computer Eductation for Western Montanna College got together on a proposal for an electronic data network to tie all these isolated schools together. Along the way, they won a joint grant from the MJ Murdock Charitable Trust and the Mountain Bell Foundation in the amount of **$106,000** to effect such a network. The result is a fascinating system they call **BIG SKY TELEGRAPH** that operates at **(406)683-7680** at **300** and **1200** bps.

The system runs on an **SVC 386** microcomputer using **SCO Xenix** as an operating system and **XBBS** version **4.32** as a BBS system - albeit one that's felt a pretty heavy modifying hand from Mr. Hughes - the technical consultant. The system is connected to two in-state **800** numbers and four toll lines. It also features a voicemail system at **(406)683-7695** that operates virtually as a voice BBS. Dave has even tied a facsimile machine **AND** an **OCR** (**O**ptical **C**haracter **R**ecognition) scanner into the system. You could fax a page of printed text to these guys and they could have it scanned in and online for download to rural schools all over the state as an **ASCII** file literallywithin minutes.

The system offers participating rural schools a variety of services including E-Mail, conferencing, online courses, and a database of downloadable lesson plans on just about anything. If a teacher in some remote area wants a lesson plan for electronics technology suitable for a fourth grade student - it's available and just a telephone call away.

The system contains an enormous variety of information - even for newsletter editors. We first learned of the **NASA** Educational Affairs Division **SPACENET BBS** on this system as well as finding out about a **UUCP** system operating locally. Obviously, the major theme is education. But all callers are welcomed with refreshingly lucid, readable screens and instructions.

Lately, there has been talk of tying in more schools to the system, including rural schools in Wyoming and Colorado. This is the direct application of PC communications technology to the benefit of all - a BBS at its very best. Our hats off to Mr. Hughes, Mr. Odasz, and the Western Montanna College Rural Education Center for a very notably encouraging word.....where the skies are not cloudy all day. Western Montanna College, Box 11, Dillon, Montanna; **(800)962-6668**

NASA SPACELINK

Last issue, we reported on the **NASA Space Science Data Center** in Washington D.C. at **(301)286-9000**. The service provides some fairly technical information on space-based experiments. This month, we've located a more general interest service titled **NASA SPACELINK** Space-Related Informational Database operated by the **NASA Educational Affairs Division** at the Marshall Space Flight Center in Huntsville Alabama. The service is available at **(205)895-0028**.

NASA SPACELINK provides more general interest information about **NASA** activities including the current status of various ships and equipment currently being processed or tested. Additionally, this system provides assistance to educators by way of information that can be used in the classroom. Historical texts describing **NASA**, current news, **NASA** educational services, list of **NASA** installations, and texts describing some of the many technological marvels in consumer electronics and medicine that were outgrowths of our nations space program are available. Current **NASA** News, for example, contains a complete listing of all current official **NASA** news releases - including such detail stories as a description of a new space shuttle carrier aircraft, and notification of the formation of a space commercial development advisory group.

The service is totally free and runs on a Data General **ECLIPSE MV7800** minicomputer. Enter **NEWUSER** for both Username and password when logging on. Note that **NASA** also intends to operate a voice telephone service during shuttle flights. Callers will be able to get shuttle news and update and even listen in on conversations between shuttle crew and ground personnel. The service will cost **$2** for the first minute and **$0.45** for each additional minute. Dial **1(900)909-NASA.**

FEDERAL LIBRARY INFO NETWORK

FEDLINK, the Federal Library and Information Network operates an online service for librarians titled **ALIX** (**A**utomated **L**ibrary **I**nformation e**X**change II) at

(202)287-9656. The system runs on an IBM AT clone over four telephone lines using TBBS multiline system software. It provides a forum for exchanging information on library and information center automation programs, solutions to library/info center automation problems, and microcomputer experiences and techniques for librarians. Bruce Miler and Erik Delfino act as system operators.

ALIX provides a wealth of information on how to automate your library or information center. It includes an online electronic newsletter largely comprised of clippings from the **Library of Congress Information Bulletin**. The system also provides a fairly comprehensive list of professional library/information associations operating on both national and state levels. This is a virtual mailing list of every library association in the country.

The interesting thing about this system is that it deals with the nuts and bolts of presenting information online - ostensibly by libraries. But the techniques are applicable to anyone operating any type of online information system. For example: we found a fascinating conference in progress dealing with optical-character-recognition devices/software to allow libraries to convert printed matter to an online format. A Palantir system was the current subject of hot debate. There was also a variety of software available of fairly narrow interest including a **CDROM** cost analysis in Lotus 123 and Supercalc formats as well as a utility to convert **BRS** downloads (an online commercial database) to dBase format and a voice telephone list of almost every Federal library in the country.

WILDLIFE/FISHERIES BBS

North Carolina State University sponsors a Southeastern Cooperative Wildlife and Fisheries Statistics Project. As part of this, they operate an RBBS bulletin board system titled **SESAME** (South-Eastern Software And Message Exchange) at **(919)737-3990** in Raleigh NC. Wayne Cornelius serves as system operator. **SESAME** operates **24** hours at **300/1200/2400** bps.

SESAME specializes in software and information for biologists, wildlife/fisheries managers, and professionals from around the country. They maintain a national list of other BBS devoted to wildlife preservation, nature, and ecology. They also provide a special section for the American Fisheries Society and The Wildlife Society.

The system is open to all with an interest in hunting/angling and it actively solicits software relating to the management of fisheries and hunting areas.

SESAME, North Carolina State University, PO Box 8203, Raleigh, NC 27695; **(929)737-2531** voice.

GRAPHIC FILES BBS

Jim Maxey of Portland Oregon operates a fascinating service titled **EVENT HORIZONS** at **(503)777-1578** on a four-line TBBS system. The service is not only not free, it's not even cheap at **$3** hourly (**2400** bps) or **$8** hourly (**HST 9600** bps) with a **7**-hour minimum payable in advance. However, you can log on and look around for twenty minutes at no charge.

The purpose of Event Horizons is to provide an immense variety of digitized graphics images available for download. The good news is that Mr. Maxey creates all his own graphics files by digitizing them with **800**-line cameras and digitizers into incredibly vivid high resolution images including **VGA** standard images in **512 X 400** dot resolution with up to **256** colors. They call these **MAXIPICS**. The bad news is that if you do pay to subscribe to the service and do download graphics images, you can't really do anything with them. Mr. Maxey claims that he creates and owns all these images himself and retains full copyright to them. Given the wide number of movie celebrities and cities included in his graphics files, as well as Playboy Magazine centerfolds, we have to seriously question his copyright to all the materials listed but it's largely a mute point. You can download and look at the files, but ostensibly you cannot use them for anything commercial or even useful apparently without further "arrangement" with Mr. Maxey.

The system also provides a custom digitizing service. You can mail in a photograph and have it color digitized for **$12.50** for **EGA** quality and **$28.50** for high resolution **VGA** quality. We assume you can use your own digitized photographs for whatever you like. Conversely, you can upload a file and have it converted to either **35MM** slide or a printed image.

Mr. Maxey goes to some pains to point out that they do not take credit cards, there is no quantity discount, and they don't "trade" images. We did download the **CATALOG.ARC** file and from what we could tell, there is an immense number of images available for download. Everything from Oregon Coastline to Twin **'57** Chevies to John Lennon, and of course the usual plethora of bare-backed beauties in various poses of indiscretion that have become common in the world of PC graphics.

The concept of custom digitized photos, a large high resolution library of existing **GIF** file images, operating on a multiline commercial **TBBS** is just excellent anyway you cut it. We found this one marred by

moderate over pricing, and a childishly strident defense of same in spite of the overall technical excellence. This is a recurring theme on the emerging commercial type of BBS. Once the sysop arrives at a price schedule, he then seems driven to convince not only his users, but himself that it is an appropriate value. Unfortunately this is normally accomplished by shrill, even accusatory monologues that destroy the professional image that might convince us the service is worthwhile at the posted price. This overselling, in short, backfires with monotonous regularity. Event Horizons should be a marvelously worthwhile service. With a seven hour minimum and the current attitude of the operator, we'll not likely soon know. Event Horizons, 5800 S.E. 88th Ave, Suite 30, Portland, OR 97266; **(503)777-3595** voice.

SHAREWARE.

BINKLEYTERM VERSION 2.00 RELEASED

At one time, Fidonet was both a network of computer's that automatically exchanged mail in the wee hours of the AM and a BBS software package required to join the network. In the last few years, numerous other BBS software packages have been released that were capable of communicating with the Fidonet, most notably the **OPUS** BBS package. More recently, a group of "mail handlers" has come out that can give most any BBS package a Fidonet "front-end". Programs such as **Dutchie, D'Bridge, FrontDoor,** and **BinkleyTerm** provide varying degrees of network interface capability, and in most cases, don't require the operator to run a BBS at all to join the fun.

These mail packages open up an entirely new world of BBS communications to PC owners. The only hard and fast requirement for joining Fidonet and receiving your own Net/Node number is to be mail capable via one of these packages and to reliably be up and running during National Mail Hours (**0300-0400 MDST**). These packages eliminate the need to run a BBS at all! Once you have a Net/Node, you can receive/send mail to over **3800** Fidonet systems world-wide.

For those who don't want to keep their machine up all night every night for mail, a number of local Fidonet sysops have begun setting up mini-nets made up of their more active users. The user, or "point" system, can "poll" his "boss node" to pickup mail at any mutually agreed on time. Likewise, if the point system wants to send a message, he passes it to his boss node for transmission. The boss node is a fully capable Fidonet BBS in most cases who, in a sense, handles and stores mail for the points in his sub-net.

One of the most popular mail programs is titled **BINKLEYTERM**. It is available completely without charge and it includes a terminal program as well as the mail capability and features in integral **ZModem** file transfer protocol.

The **BinkleyTerm** terminal program is pretty basic in most respects and it can be somewhat more complicated to set up than packages such as ProComm and Telix. It requires a manually created configuration file and the use of a separate FOSSIL program to control the modem. Few users choose Binkley just to log onto local BBS. The program's unattended mode is where the magic comes in. Incoming calls from Fidonet compatible systems are handled quite automatically and Binkley can be used to send and receive both messages and files. An event schedule file allows you to specify when and where the messages/files are sent.

Binkley is classified an "open" system. This is because it is used as a mail front end for a variety of other BBS software as well as accommodating a variety of message editors, packers, etc. If all of this sounds a bit complicated, rest assured that it is in fact a bit complicated. The interaction of batch files, nodelists, message editors, packers, and **BinkleyTerm** is referred to by some as "Voodoo Programming" and it's driven more than one PC owner to near hysteria. But once you have it all working together, it does a credible job of handling incoming and outgoing mail. It requires only **160 KB** of **RAM** to operate and it is commonly used with multitasker software to allow backgroun operation.

Version **2.00** of BinkleyTerm was released on **August 27** in the file **BEXE_200.ARC**. The file includes documentation, configuration files, the executable **BT.EXE** and some assorted small text files. The new version adds an improved screen interface providing five "windows" to monitor current settings, pending outbound mail, recent activity, transfers in progress, and a today-at-a-glance summary. The configuration and event schedule has been separated into two files in this upgrade from the previous version **1.50**. The package now supports modem speeds up to **38,400** bps.

The program was written by Vincent Perriello of Naugatuck Connecticutt (Fidonet **141/491**) with the assistance of Bob Hartman of Nashua New Hampshire (Fidonet **132/101**). A local Denver sysop, Alan Applegate, created the documentation files and can be reached at the **Short Line BBS Fidonet 104/36** at **(303)778-7312**. Short Line has the **BEXE_200.ARC** file available for download. The program is also available on the **Denver PC Boardwatch** roundtable on the local General Electric **GEIS** service at **1-976-4347.** Type **BOARDWATCH** at any prompt.

SELDIR.ARC
Since verion **2.0** of **DOS** we've been blessed with the capability of defining a subdirectory tree. Most of us have done a lot better at defining than remembering what it was we defined. Last issue, we described a program that lets you find a file anywhere on disk (**WHEREIS.ARC**) with a simple command that almost appears as a **DOS** extension. This issue, we continue our series on the small, unnoticed utilities that make life easier with a program that works very well in tandem with **WHEREIS**. It's called **SELDIR** for **SEL**ect **DIR**ectory. Where **WHEREIS** helped you find files, **SELDIR** will help you find directories.

The program comes in an archive file of **5760** bytes titled **SELDIR.ARC**. It unarchives to two files **SD.DOC** (**530** bytes) and **SD.EXE** (**5840** bytes). Place the **SD.EXE** file in a utility directory somewhere on your hard drive that is pointed to by the **DOS** path command in your **AUTOEXEC.BAT** file. In this way, the new **SD** command will be available from anywhere in your drive.

Using **SD.EXE** is embarrassingly simple. For example: assume you are in the root directory of the **C** drive (**C:**) and you wish to change directories. In the case where you might enter the normal **DOS** command **CD \MAIN\COMM\JACK2\SINGLES**, simply enter **SD SINGLES** instead. The program will automatically seek out the path to **SINGLES** and change the directory for you. It's small. It's simple. It works. And if you do much hard drive navigation this program can literally save you thousands of keystrokes.

SD.EXE and **WHEREIS.EXE** can work very well in tandem. For example: assume you wanted to find the file **JOLLY**. Enter **WHEREIS JOLLY**. The **WHEREIS** program will return the subdirectory **JOLLY** is located in **\HUMOR\TXTFILE\NOV88\CLOWNS\JOLLY**. Rather than type all that in, simply enter **SD CLOWNS**. You'll instantly be transported to **C;\HUMOR\TXTFILE\NOV88\CLOWNS** and have immediate access to **JOLLY**.

SELDIR was written by Grover Bowen, 650 West 47th Ave., Anchorage, Alaska 99503. Mr. Bowen wrote the program in January of **1988** using Turbo Pascal **4.0**. No shareware contribution is solicited. Thank's for making life a little bit easier Grover. Locally, **SELDIR.ARC** is available for download from the General Electric **GEIS** service at **1-946-4347**. Enter **BOARDWATCH** at any prompt.

GT POWER UPDATE
Mr. Paul Meiners of P&M Software called to take us to task over our review of **GT POWER** version **14.01** in the August issue. It would seem we mispelled Mr. Meiners name. Our apologies. We would be horrified to find reference in the popular press to **Denver PC Birdwatch** for example. We also listed the delay counter as incrementing by **0.20** seconds with each usage vice the actual **0.020** seconds (a typographical error). Mr. Meiners further denied that registrations of his product dropped precipitously after the "crippled" version **13.00** was released. In fact, he indicated that his monthly gross jumped from around **$1500** monthly to nearly **$8500** via the ploy. And he went on to state that he had a total of **1800** users registered with about **180** per month currently signing up. We were forced to the obvious question - if it caused income to jump by a factor of five, then why did he then drop the protection scheme in version **14.01**? After a pronounced silence, he replied that his users were registering - but they were "pissed off" when they did call to register and he wanted them to be happy. We think it 's just ducky that Mr. Meiners would forgo some **$7000** in monthly sales to keep his customers "happy". In a spirit of conciliation, we will pass these comments on to you, our readers, without benefit of our usual caustic and in this case all too obvious reply. But Seriously.....

PKWARE LOSES SUIT TO SEA OVER ARC PRODUCTS
In a stunning legal victory, System Enhancement Associates (**SEA**) won a Judgement for Plaintiff on Consent by Judge Myron L. Gordon in the United States District Court for the Eastern District of Wisconsin in Milwaukee against PKWare, Inc. and Phil Katz. This **August 2, 1988** decision is the first case of litigation concerning shareware software and seemed to decisively uphold the copyrights of shareware authors.

The orginal dispute between PKWare and **SEA** arose when Phil Katz created a "clone" of **SEA**'s popular **ARC** utility program in late **1985**. **ARC** operates to combine a series of files into a single file with a **.ARC** suffix. In the process, it also compresses the file using one of several available compression techniques. As a result, a program consisting of **30** files for example and requiring **400 KB** of disk space would be compressed to a single **.ARC** file of perhaps **250 KB**. The advantage in data communications is obvious.

The PKWare version of the utility, **PKARC**, was a significant improvement over **ARC** primarily in speed of operation. Last November, **SEA** requested PKWare to pay license and royalty fees. PKWare declined to do. **SEA** then filed the suit alleging copyright and trademark infringement, unfair trade practices, and unfair competition.

In the judgement, which incorporates a bizarre cross-license agreement, **SEA** receives undisclosed monetary damages based on the infringement along with full litigation expenses and legal fees. PKWare is licensed to distribute **PKARC** until **January 31, 1989** and will pay **SEA** royalties on each sale. Thereafter, **PK** will be permanently enjoined from distributing **PKARC** or any programs that will operate on **.ARC** files. Additionally, they were enjoined from using the **ARC** trademark.

Most notably, PKWare licenses its **PKARC** source code to **SEA.** This opens the door for **SEA** to incorporate the speed improvements of PK into their own **ARC** product.

Interestingly, PKWare had just released version **3.6** of its **PKARC** program. The recent version featured further speed improvements. Unfortunately, it also contained some "protection" code to prevent users from disassembling or altering the program. This code was somewhat sloppily implemented causing conflict with other programs. When used with **BBSCHESS**, Chuck Forsberg's **DSZ** Zmodem protocol, and by some reports, Quarterdeck's **DESQVIEW,** it often caused a warm boot of the host machine.

Coincident with the court decision, **PK** released **PK361.EXE** on **August 2**. This version fixes the version **3.6** conflict. As part of the package, a joint press release by PKWare and **SEA** was included describing the court decision. Significantly, **PK361.EXE** self extracts its component programs to produce not the expected **PKARC.EXE** and **PKXARC.EXE** files, but rather **PKPAK.EXE** and **PKUNPAK.EXE**. This is obviously done to avoid the trademark infringement of using **ARC** in the filenames. **PK361.EXE** is available for download from the **SHAREWARE** area of the **GEIS Denver PC Boardwatch Roundtable.** Dial **1-976-4347**, logon, and enter **BOARDWATCH** at any prompt to access the **Denver PC Boardwatch Roundtable.**

EDITOR'S NOTES

Last month's editorial on telephone sales solicitations seems to have struck a nerve. We've received a number of calls supporting a ban on the beasties altogether and none taking the side of the telephone solicitors. If the sentiment toward this intrusion is so one-sided, why has nothing been done?

It's likely a matter more of dollars than sense - as these things are wont to be. We've become a society dependent on print and broadcast media to spur us to action. This dependency has reached the point where we assume that if it were really a worthwhile cause, we would have heard something about it on TV or read about it in the newspaper. And while the journalists of the popular press certainly strive to avoid undue influence of advertisers, it hardly pays to take a largely editorial position that immediately alienates an entire segment of your potential advertising clients. In any event, we think you will hear more on this subject in the future.

It would appear **Denver PC Boardwatch** has survived another summer. Interest in online activities seems to wane harshly with the delightful summer weather. Both subscriptions and retail sales of our little rag suffered from the heat. But we're now enjoying the same autumn recovery we noted last year. With the cautious addition of some modest advertising revenue of our own, the future of **Denver PC Boardwatch Newsletter** seems secure.

The battle for a **9600** bps communications standard rages on. Despite the shrill insistence of those sysops who have invested in the US Robotics **HST 9600** model to the tune of some **$505** per, the **9600** bps question is not only still unsettled, but it gets wilder with each new development. Hayes has introduced a tempting package whereby sysops can pick up a new Hayes **9600** bps modem for actually less than the street price of their **2400** bps unit. Now, Intel introduces a communication card featuring yet another technique and it seems most of the software heavyweights are willing to adopt this specification as a standard virtually immediately. While the Fidonet would seem to be pretty much a US Robotics-based network, there have been defections, particularly on the east coast. It will be interesting to see what effect Hayes' new program has on this. One sure way to a Fidonet sysops heart is through his pocketbook and Hayes may have well found a way to turn things around by undercutting USR by over **$100**. These two companies could each double sales overnight and at the same time avoid a price bloodbath by simply agreeing to communicate at **9600** bps via some common mode.

The current trend toward litigation among software companies and BBS operators is a nettlesome basket of goods anyway you view it. Hopefully this activity will help to educate the electronic community more on what is in the purvue of the public domain and what does constitute works protected under copyright law. We've noted an alarming trend locally toward "armchair lawyering" of a grossly inaccurate and in some cases dangerous nature. The popular myth is that if you take a protected work and change some set percentage of its content that it then somehow becomes yours to do with as you like. We know of no legal basis for this but it seems an enchanting if slightly ridiculous

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MINDS runs under the MS-DOS or PC-DOS operating system versions 3.00 or later. It supports both color and monochrome monitors. Less than 128K memory is required for the retrievers, 640K is recommended for the Authoring System.

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notion. Creators of both technology and information products must be able to count on the ability to control the sale of their works.

On the other hand, in a perfect world all information would be freely and instantly available to anyone who desired it. The elements of social good stemming from the free and open exchange of information are still valid if somewhat economically unrealistic. There should always be room for a better mousetrap. We cannot allow advances in information and communication technology to fall prey to the insufferable posturing and preening of barristers. To some degree, this has already happened to our national telephone system via Judge Greene's fascinating theory of democratic government by judicial decree.

Had advances in communications technology been made in the past with the speed of our legal system, we would all be communicating by printing with potatoes carved in the shape of block letters dipped in fingerpaint. While it's dubious that the Regional Bell Operating Companies truly have the interests of the consumer at heart, without the current legal restrictions - whatever they would do to us they could at least do quickly. And Judge Greene would then be free to provide his wise counsel and learned administrative guidance to our deserving friends in the telephone solicitation industry.

We look forward to the many new product developments and the introduction of many fascinating new online services that autumn brings. Visionaries such as Dave Hughes of Colorado Springs and his Big Sky Telegraph system for rural Montanna schools demonstrate what can be done with this technology for the common good. With the dramatic increase both in the number of people working from home via PC and the online services/resources available to them, we are enormously encouraged and excited by the prospects of our electronic village both locally and on the national level. We intend to continue to serve as a lens and focal point for information and developments affecting this community of infopreneurs and technical pioneers to whatever extent our meager abilities allow. Do join us in this effort.

Jack Rickard
Editor, Denver PC Boardwatch Newsletter

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DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - OCTOBER 1988

TITLE	PHONE	DESCRIPTION	TYPE	BPS	SOFT	CITY	SYSOP
NBS Automated Computer Time	494-4775	ACTS - Sync PC Clock to NBS Atomic Clock	Custom	3/12	Custom	Boulder	Natl. Bureau of Stds.
Adelante 104/93	443-8292	Central/Latin America Social Issues	IBM	3/12/24	Opus	Boulder	Zhahai Stewart
Aerie, The 104/40	292-3162	Science Fiction	IBM	3/12	Opus	Denver	Leland Dirks
AmNet On-line 104/65	1-223-1297	Animal Rights Issues	IBM	3/12	TBBS	Ft. Collins	James Cherry
Arkham Public Library 104/48	444-7686	Tradewars Game/IBM Software	IBM	3/12/24	QuickBBS	Boulder	Neil Beaty
Aurora Chairman	340-1844	City of Aurora Council/Mayor Forum	IBM	3/12	Chairman	Aurora	City of Aurora
Braun's Link	745-0972	Copyrighted Software Downloads???	IBM	3/12/24	QuickBBS		Vthor Braun
Byte Shop 104/311	794-5065	Jokes/Good Echomail/Downloads	IBM	3-96HST	QuickBBS	Littleton	Dan O'neal
Cable Net Opus	933-9359	Excellent Shareware Library	IBM	3/12/24	Opus	Lakewood	Ted Gilmore
Cash Connection	421-5995	Borrower/Lender Financial Matchmaking	IBM	3/12	OPUS	Wheat Ridge	Richard Sweeny
CBA Information System	329-0159	Continental Basketball Association	IBM	3/12	TBBS	Denver	???
Christian Protocol	693-8791	Christian Messages - Bible Text	IBM	3/12/24	TBBS	Denver	Ken Johansen
Club Micro 104/88	832-5850	"C"Language/Database/Communication Files	IBM	3-96HST	Opus	Denver	Don Marquart
CMOS	322-4078	Colorado Mountain Operating Systems	IBM	3-96MIC	Minihost	???	Kevin Truitt
Coco County Airport 104/54	343-6707	TRS Color Computer Support	IBM	3/12/24	Opus	Aurora	Ron Bihler
Colorado Broadcasters 104/42	572-6256	Commercial Radio Frequency Lists	IBM	3/12	Opus	Denver	Lynn Osburn
Comm-Post, The 104/666	534-4646	Astronomy - TI-PC - 90+ MB of Files	IBM	3/12/24	TBBS	Denver	Brian Bartee
Control Systems	458-6248	IBM/Compatibles Subscription Board	IBM	3-96MIC	RBBS	Denver	Lupe Ramiriz
Corner Pub, The 104/414	**759-8619**	**Messages (32 areas) $10 annual fee.**	**IBM**	**24**	**QuickBBS**	**Denver**	**Richard Douglas**
CP/M SIG INC 104/372	465-1313	Oldest User's Group in Area - CP/M - IBM	IBM	3/12/24	Fido	Broomfield	Al Lundquist
Cyber-Zone, The 104/61	860-0126	Science Fiction/USA Today	IBM	3/12/24	QuickBBS	Denver	Jonathan Wood
D-Link 1 104/411	936-2791	Golden Micro Computer Sales/Support	IBM	3-96HST	QuickBBS	Denver	Bob Wells
Data Bank	494-0167	IBM Messages	IBM	3/12/24	TCOMM		Guido Binetti
Day's End 104/20	650-5636	Astronomy Files-Telix/SF Echos/USA Today	IBM	3-96HST	Opus	Denver	Chris Day
Denver Central 104/412	758-8720	Trojan List/Sports and Cooking Echoes	IBM	3/12/24	Opus	Denver	Dana Palmblad
Dog House, The	320-0501	IBM/Atari Downloads - FoRem Net Mail	IBM	12/24	Forem	Denver	Lonnie Shinault
DROID, The	933-1501	On-line Tradewars and Baseball Games	IBM	3/12/24	QuickBBS	Littleton	Leonard Vandermate
Eagle's Nest	933-0701	IBM and Amiga Special Interest Areas	IBM	3/12/24	QuickBBS	Littleton	Ronald Olsen
Education 2000 104/29	449-9807	Education Issues Kindergarten - 12th	IBM	3/112/24	TBBS	Boulder	Roger Salamen
eSoft Support	699-8222	eSoft Inc. TBBS Software Support	IBM	3/12	TBBS	Aurora	Phil Becker
Fido NBS 104/607	497-3934	National Bureau Standards - Jobs SIG	IBM	3/12/24	Opus	Boulder	Cathy Nicolleti
Front Range PC Users Group BBS	1-493-4094	Fort Collins Group - Computer Express	IBM	3/12	Wildcat	Fort Collins	Tom Oppenheimer
FutureWave BBS 104/57	440-7425	Games / C Language / MIDI 6PM-7AM	IBM	12/24	Opus	Boulder	Ross Sponholtz
Gay Community 104/19	795-1215	Messages / Downloads for Homosexuals	IBM	3/12	QuickBBS	Littleton	???
GDP Technologies BBS	673-9470	CoreWars Game/C Language/Great Shareware	IBM	3/12/24	Wildcat	Lafayette	Tom Gettys
Grand Junction MUG	1-241-1966	Grand Junction MUG - Ham/Packet Radio	IBM	3/12	PCBoard	Grand Junction	MUG of Grand Junct.
Grizzly King	666-0824	Freeware/Colorado Outdoors/Programmers	IBM	3/12	TBBS	Lafayette	Bob McDuffee
Grotto, The	694-9050	Amiga, Pascal - Ebert Personal Computers	IBM	3/12/24	TBBS	Aurora	Vincent Veritas
Highlands 104/508	**690-4483**	**Online Games - Tradewars - Meeba Wars**	**IBM**	**12**			**Glen Phillips**
HP Haven 104/312	427-6976	Tradewars/On-line Games/ 5PM-7:30 AM	IBM	3/12/24	QuickBBS	Westminster	Mark Willecke
Info-Net BBS	680-1648	Computer's Plus Board	IBM	3/12/24	RBBS	Aurora	Computer's Plus
Into The Wind 104/63	939-9272	Support for Shamaal Software 10P-11A	IBM	3/12/24	Opus	Boulder	Dana P'Simer
Investment Lounge	759-3721	Excellent Investment/Financial Topics	IBM	3/12	TBBS	Aurora	Mark Greve
Isle of Man	447-1942	Gay Community BBS	IBM	3/12	RBBS	Boulder	???
Lakewood Department of Safety	987-7388	Police Sponsored - Law Enforcement Msgs	IBM	3/12	RBBS	Wheatridge	Larry Scheideman
Lodge, The	420-0305	Arvada Quick BBS Board	IBM	12	QuickBBS	Arvada	Harold "Monty" Montrose
Master Work, The 104/55	341-6614	Recently Up - General Communications	IBM	12/24	Opus	Aurora	Roy Prickett

Maverick	**1-434-4211**
Metamorphasis	1-772-7229
Micro World Infomat	987-2671
Micro-Date 104/64	455-4793
Microlink B 104/108	972-9600
Microlink C 104/53	455-9600
Microlink D 104/711	467-9704
Microlink Minus Two 104/204	329-9598
Mile Hi Tech Fidonet 104/56	973-9338
Mile High Net	671-7308
New Age Bulletin Board, The	665-9152
Northern Area Telecomm 104/606	**1-669-2553**
Nurse Link 104/52	270-4936
OKY BBS	494-0533
On-Line Consulting 104/45	449-5251
On-Line Shopping Service	442-5125
P2B2 S 104/51	329-3337
PCjr-NET 104/904	789-4610
Phoenix TBBS 104/739	841-9570
Pinecliffe 104/28	444-7073
Priority Business Sys. 104/41	**771-8107**
Professional System, The	740-2223
Quick BBS Support Board 104/24	423-3114
R.A.B.B.I.T.	757-9509
Rabbit Mountain BBS	**460-1093**
Rocky Mountain RBBS	750-2107
Shepherds Bush 104/77	497-6968
Short Line 104/36	778-7312
Silver Streak, The	790-2534
SnarfQuest I 104/604	973-9402
SnarfQuest II 104/314	978-0510
SnarfQuest]I[104/46	761-1634
Sound Doctrine Bulletin Board	680-7209
Space Environment Service Cntr	497-5000
Space Network	494-8446
Squirrel's Nest	1-242-7977
Steamboat Information	1-879-6741
Stonehenge 104/39	497-6051
TBBS Net 104/23	699-9248
Terus Public BBS 104/43	469-7161
Terus RegUser 104/44	341-1404
The 8th Sea 104/610	252-9235
This End Up 104/30	429-2445
Translations Unlimited	**988-5765**
Trout Unlimited	499-2828
Twin Peaks PCBoard	1-651-0225
UniSource	721-6640
USA Today Distribution 104/555	973-4222
Value Line, The	363-0422
Watchdesk, The 104/66	450-0822
Waterton Computer Club	977-7096
C.A.R.L. Denver	830-0519

Hardware Sales - $10 Annual Fee	**IBM**	**3/12/24**	**RBBS**
PCB-Echo Net/260 MB of Files/Online Game	IBM	3/12/24	PCBoard
RBBS-IBM-Commodore-Amiga-Atari 7PM-8AM	IBM	3/12	RBBS
Matchmaking/ELIZA Psychoanalyst On-Line	IBM	3/12/24	TBBS
Good Download Library - USA Today News	IBM	3-96HST	TBBS
Professional Computer Sales Co.	IBM	3/12/24	TBBS
Professional Computer Sales Co.	IBM	3-96HST	QuickBBS
Professional Comp. Sales Inc./Astronomy	IBM	3/12/24	TBBS
Fido News/List	IBM	3/12/24	TBBS
Fido Board	IBM	3/12/24	Fido
Inner Development, Natural Health&Envir	IBM	3/12	TBBS
(NATO) Tradewars - SI Droids games	**IBM**	**3/12**	**Opus**
UCHSC School of Nursing	IBM	3/12/24	TBBS
Armenian Electronics Consultant	IBM	3/12/24	QuickBBS
Consultant Directory/Desktop Publishing	IBM	3/12/24	Opus
Boulder Home Grocery Delivery $5 + 5%	IBM	3/12	Chairman
Public Psychiatry / AI Themes 6PM-8AM	IBM	3/12/24	QuickBBS
IBM PC Jr. Technical Info /Radio Comm	IBM	3/12/24	Opus
USA Today Newspaper/4 lines/INFO-MAT Mag	IBM	3-96HST	TBBS
170 Meg - Online Order for CDB Systems	IBM	3/12/24	Opus
PC Magazine/Tech Journal Files	**IBM**	**3/12**	**Opus**
Writers, Lawyers, EDP Auditors	IBM	3/12	TBBS
Home of Quick BBS Software	IBM	3/12/24	QuickBBS
Colorado Highway Department - Planning	IBM	3/12	TBBS
Online Games/Tradewars/Chess	**IBM**	**3-96HST**	**Wildcat**
INFO NEEDED	IBM	3/12	RBBS
IBM Technical - Utilities	IBM	3-96HST	Opus
Opus/BinkleyTerm Support/Pascal/ C	IBM	12/24	Opus
Science/Engineering/Turbo Pascal Utils	IBM	3/12/24	Wildcat
The Tavern - Hot 386 with Games/ReadMACs	IBM	3/12/24	QuickBBS
The Dragon's Lair - IBM PS2 80 w 115 MB	IBM	3/12	QuickBBS
Chivalry's Final Domain -Tradewars/Chess	IBM	3-96HST	QuickBBS
Christian BBS / Sound Doctrine Church	IBM	3/12	TBBS
NOAA Solar Flare Forecast / Advisory	IBM	3/12	PBBS
Space Exploration Information	IBM	3/12/24	TBBS
Grand Junction BBS	IBM	3/12/24	PCBoard
Info on Steamboat Springs Area	IBM	3/12	TBBS
C Program Files - C Echo Area 5PM-8AM	IBM	3/12/24	Opus
T)he B)read B)oard S)ystem Support	IBM	3/12/24	TBBS
MINDS AI TextBase Indexer Support	IBM	3-96HST	Opus
MINDS Online Textbase - USA TODAY	IBM	3-96HST	Opus
Net 104 Coordinator - Lots of Echomail	IBM	3/12/24	QuickBBS
Denver PC Boardwatch/USA Today	IBM	3/12/24	Opus
Translations/Data Communications	**IBM**	**3/12/24**	**Minihost**
Trout Fishing / Water Condition Reports	IBM	3/12	Fido
On-line Games	IBM	3/12/24	PCBoard
4-line pay service - $2.40 hourly	IBM	3/12	Galacti
USA Today Newspaper On-line	IBM	12/24	QuickBBS
On-line Mall/Shopping 8PM-5AM	IBM	3/12	QuickBBS
Safety - Arson - Hazardous Material	IBM	3/12/24	QuickBBS
Martin Marietta Employees - 5PM-7AM	IBM	3/12/24	RBBS
Colorado Alliance of Research Libraries	Tandem	24	Custom

Grand Junction	**David Fouts**
Lafayette	Tony Ferris
Lakewood	Leonard Vandermate
Littleton	Datemaster
Littleton	Girard Westerberg
Denver	John Anderson
Golden	???
Denver	Paul Smith
Littleton	Oscar Barlow
Aurora	Dave Miller
Lafayette	Harold Piser
Loveland	**Byron L. Ferguson**
Littleton	Chuck Mastrini
Boulder	Onnig Kouyoumdjian
Estes Park	Lee Lasson
Boulder	Pete Dempsey
Denver	Claude Warren
Englewood	Phil Kaiser
Parker	Larry Kayser
Boulder	Craig Baker
Littleton	**John Bilbro**
Littleton	Bob Voorhees
Arvada	Adam Hudson
Denver	Colorado Dept. Highways
Broomfield	**Kevin Dahlstedt**
Aurora	Steve Kornreich
Boulder	Kent Leonard
Lakewood	Alan Applegate
Littleton	Dennis McKinney
Littleton	John Denny
	Kurt Wiedenhoeft
Aurora	Dax Davis
Aurora	Tim Williams
Boulder	US Dept of Commerce
Boulder	Tom Meyer
Grand Junction	Allan Worley
Steamboat Springs	???
Boulder	Steve Roughton
Aurora	Phil Becker/eSoft Inc.
Broomfield	Todd Hill
Aurora	Bart Henthorn
Northglenn	Rod Lamping
Westminster	Steve Carnes
Lakewood	**Jon Johnson**
Boulder	Ralph Stewart
Longmont	Ken Krueger
Littleton	Bill Flowers
Littleton	Jack Rickard
Aurora	Chris Millikin
Thornton	Emit Hurdelbrink
Denver	Ken Beaudrie
Denver	N/A

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DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - OCTOBER 1988

TITLE	PHONE	DESCRIPTION	TYPE	BPS	SOFT	CITY	SYSOP
C.A.R.L. Denver	830-1165	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-1546	Colorado Alliance of Research Libraries	Tandem	12	Custom	Denver	N/A
C.A.R.L. Denver	830-1547	Colorado Alliance of Research Libraries	Tandem	12	Custom	Denver	N/A
C.A.R.L. Denver	830-1548	Colorado Alliance of Research Libraries	Tandem	12	Custom	Denver	N/A
C.A.R.L. Denver	830-2199	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-2241	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-2265	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.A.R.L. Denver	830-2297	Colorado Alliance of Research Libraries	Tandem	3/12/24	Custom	Denver	N/A
C.D. Players	825-0419	Computer Discount On-line Store/Amiga	Amiga	3/12/24	TBBS	Denver	Tony Scott
Aces High	329-6579	Apple Programming/Messages	Apple	3/12	GBBS	Denver	Glenn Hayhurst
Apple Mountain Times	428-0372	Smoke Signal Software/PRIME BBS Support	Apple	3/12/24	Protree	Denver	Vince Cooper
APSNet	693-6737	Aurora Public Schools Network	Apple	3/12/24	GBBS	Aurora	Columbia Middle School
Box's Cabin, The	424-9185	Apple / Technical Notes	Apple	3/12/24	Protree	Arvada	Kent Roberts
C.A.C.H.E	745-4960	CO Apple & Compatible Home Enthusiasts	Apple	3/12/24	GBBS	Denver	???
City Morgue, The	442-8498	Necromaniacal Fixation With Stiff Bodies	Apple	12/24	GBBS	Boulder	???
Code 5150	596-6673	Lunatic Discussions / Crazy People	Apple	3/12/24	GBBS	Aurora	Chris Thilges (Grunt)
Cutting Board, The	427-2413	60 MB Apple Software and Messages	Apple	3/12/24	GBBS	Lakewood	Cutter
Dark Side of the Moon	469-3437	Matchmaking / Dating for Teens	Apple	3/12	Protree	Broomfield	Marc Anderson
Denver Deaf-Net	989-9245	Hearing Impaired/Computing	Apple	3/12	Protree	Lakewood	David Sheneman
Discovery, The	449-8946	Music / General Messages	Apple	3/12	AlphaIII	Denver	???
Funny Farm	989-0915	Apple Only BBS	Apple	12/24	???	Lakewood	???
Genesis Project	287-8267	Apple II General	Apple	3/12/24	Protree	Commerce City	Gene Humbert
Greeley-Com-Net	1-351-8861	Modem Users Board	Apple	3/12/24	GBBS	Greeley	Lowell Shatraw
L&L Support	420-3568	Primary GBBS Pro Software Support BBS	Apple	3/12/24	GBBS	Arvada	Lance Taylor-Warren
Land of Lindon	987-2094	Fantasy Runequest Games	Apple	3/12	AlphaIII	Lakewood	???
LES-COM-net	233-5824	Lesley College Communications Network	Apple	3/12	GBBS	Wheatridge	George Willett
Mom's BBS	690-4913	General Message/Socializing	Apple	3/12	ALFA-III	???	???
Next Generation	425-6235	On-line Games	Apple	12/24	Protree	Golden	Tony ???
Odyssey III	691-0169	Adult(18) / Sex Oriented 5PM-8AM	Apple	3/12	GBBS	Denver	Sundance
S.O.B. Lanes, Inc.	452-6902	Apple Board with Bowling Theme	Apple	3/12	GBBS	Westminster	Simon
Timberline Saloon	798-1207	Apple II - Foul Language a Specialty	Apple	3/12	GBBS		Sam Walsh
Trekker World	366-5011	Star Trek Fanzine 7AM-10PM	Apple	3	GBBS	Aurora	Robert Morgan
Bavarian's Gausthaus	367-5877	New Atari BBS Software System	Atari	3/12	Express	Aurora	Bavarian
Charlotte's Web	867-0668	Atari BBS	Atari	3/12/24	CarinaII	Aurora	Bob and Charlotte
Four Wheeling BBS, The	469-4954	Jeeping / Camping / Outdoors	Atari	3/12	Forem	Broomfield	John Ferguson
Generic BBS	1-857-6881	Titanic Historical Society Information	Atari	3/12	BBS Exp	Fort Lupton	L.A. Sneeringer
Mile High Forem	431-1404	Outstanding Atari ST Database - HST 9600	Atari	3-96HST	Forem	Arvada	???
Mycroft	777-8898	Horizon Computer/National Atari BBS List	Atari	3/12	TODAMIS	Denver	Phil Michaelson
Ron and Shannons BBS	978-0298	Atari Support 5.4 MB XE 130	Atari	3/12/24	OASIS	Englewood	Ron/Shannon Sellers
Skyline Computers	457-0320	Atari ST Support, Files, etc.	Atari	3/12/24	Forem	Denver	Dave Lloyd
Vault, The	796-0539	USAF/ZMAG Member	Atari	3/12	Forem	Englewood	Craig Steiner
White Runes of Tinuviel	972-8566	Tolkien Subjects/Dungeons and Dragons	Atari	3/12	STadel	Littleton	Andy Strasheim
ZAP!	367-4103	Atari/ST/8 Bit	Atari	3/12	Oasis	Aurora	???
Phasar	745-4305	Teen Conversation - Advice Column	C-128	3/12	C-Net	Aurora	Roy Rush
Regimental Headquarters	375-9556	Commodore - Military Theme	C-128	3/12	C-Net	Denver	Bob Greear
Albuquerque Starport	494-7224	Commodore Network Systems International	C-64	3/12	C-Net	Boulder	Greystoke Mindmaster
Colorado Commodore Club BBS	751-3448	Commodore Computer Info	C-64	3/12	C-Net	Northglenn	???

Comm-Net Information Service	340-2473	C-64/C-128/Amiga Info-Dnlds-Messages *	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-2341	Excellent Info for Commodore Products*	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-2744	C-64/C-128/Amiga Info-Dnlds-Messages *	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-3898	Service Jokes/Weather/Sports/Datbase *	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Comm-Net Information Service	366-7177	C-64/C-128/Amiga Info-Dnlds-Messages *	C-64	3/12	Custom	Aurora	Tele-Net Inc.
Dark Crystal, The	322-2589	Role Playing Games - Commodore	C-64	3/12	C-Net	Denver	Steve Boyd
Enterprise	320-6470	StarTrek Theme with 3.6 MB Software	C-64	3/12	C-Net	Denver	Mr. Spock
Hack Shack	688-8406	Commodore	C-64	3/12	C-Net	Castle Rock	???
Laboratory BBS/SUPERTAC	287-5274	Commodore with Laboratory Theme	C-64	3/12	C-Net	Denver	Professor Beaker
Mailbox BBS	**421-8050**	**Ham Radio/Sports/Swap/Adult Jokes**	**C-64**	**3**	**C-Net**	**Westminster**	**Richard Miller**
Nunnery, The	467-1240	Foul Language - C-64 BBS List	C-64	3/12	C-Net	Arvada	The Nun
Phone Connection	426-7969	Commodore	C-64	3/12	C-Net	Westminster	The Lineman
Realm, The	937-0215	Royal Theme - Complete with King	C-64	3/12	C-Net	Lakewood	Bob Hennessy
Spam Mania	423-0348	Areas Longest Logon Message	C-64	3/12	C-Net	Arvada	Spam-Master
Vern's Terminal Exchange	433-1150	Commodore Messages/Downloads/Ads	C-64	3/12	Ivory	Denver	???
Computer Know How	279-0224	Hard Disk Installation / Tech Support	CP/M	3/12	ZBYE	Golden	John Holmgren
Electronic Locksmith RCP/M	698-1623	50M Downloads (CP/M & MS-DOS)	CP/M	3/12/24	PBBS	Littleton	Steve Ekwall
Fantasy Mountain PBBS	278-8369	Deaf and Handicapped Issues ASCII TTY	CP/M	3/12/24	PBBS	Golden	Steve Shockley
Career Connection/DRUG	671-0801	Job/Resume/Denver Rainbow Users 7PM-7AM	DEC100	3-96HST	Fido	Aurora	Jim Turner
Mile High Epson User Group BBS	752-2943	MHEUG Club Board	EPSON	3/12/24	TBBS	Aurora	Dale Bucknam
Dialamatch 118/The Brokerage	796-9721	Adult Matchmaking	Franklin	3/12/24	DYM	Englewood	Bob Simpson
Experience Software	798-0792	Franklin Messages	Franklin	3	Network	Littleton	Experience Software
Den HUG	331-0982	Denver Heath/Zenith User Group	Heath	3/12	PBBS	Wheatridge	Larry Means
World Peace PBBS	320-4822	Current Events, Politics, RCP/M	Heath	3/12/24	PBBS	Denver	Bucky Carr
HP-BBS 104/34	1-229-9719	Jokes, Amazing but True stories,	HP-Vectra	3/12	TBBS	Fort Collins	Rob Diehl
LaserWriting Desktop Service	741-4122	Laser Printing/Scanning/Linotronic 300	MAC	3/12	RedRyder	Denver	Bill Wright
Magic	791-8732	Macintosh/Apple $15 Annual Fee	MAC	3/12/24	NovaLink	Highlands Ranch	Steve Sande
Mile High Mac Meet	758-9159	Denver Macintosh Users Group	MAC	3-96HST	WWIV	Denver	Jon Taylor
Publishing Resources Inc.	442-2011	Laser Printing/Publishing/Linotronic	MAC	3/12	RedRyder	Boulder	???
Radscan	1-675-3214	Enter RADSCAN as password	PDP-11/45	3/12	RSTS9.4	Rangely	John Henderson
Radscan	1-675-3225	Rangely PDP11 BBS Multiline - Games	PDP-11/45	3/12	RSTS9.4	Rangely	John Henderson
Radscan	1-675-3326	Password RADSCAN -	PDP-11/45	3/12	RSTS9.4	Rangely	John Henderson
Boulder Public Library System	444-2057	Library Research	Tandem	3/12	Custom	Boulder	Eyring Research
Boulder Public Library System	444-2074	On-Line Card Catalog - Member C.A.R.L	Tandem	12	Custom	Boulder	Eyring Research
Kings Bench 104/615	377-6725	Compatible Computer Info Exchange	TANDY1000	3/12/24	Fido	Denver	Ralph Allison
Blue Planet	979-7299	Space Wars Game	Tandy2000	3	???	Littleton	Tom Nielson
Computer Linkage 104/444	499-1022	TI 99/4A Fido	TI	3/12/24	Fido	Boulder	Ron Kuseski
Minds of Mines (MOM) BBS	273-3989	CSM Artificial Intelligence/Geotechnical	TI	3/12/24	TIgger	Golden	Joe Applegate
Niteline PBBS	277-1447	Texas Instruments - Lists 193 TI BBS	TI 99/4A	3/12	Paradigm	Golden	Keith Amann
Controller Board/TBBS Island	690-9423	Computer Supplies - Online Sales	TRS	3/12	TBBS	Aurora	Mike Hastings
Crossroads	499-0457	Discussion	TRS	3/12	TBBS	Lakewood	Mark Bradford
Crossroads	989-8397	Discussion	TRS	3/12	TBBS	Lakewood	Mark Bradford
Dinosaur Board	1-652-3595	Obsolete Computer Support/Adventure Game	TRS	3/12	TBBS	Niwot	Chris Anderson
King's Market Bookshop	665-6091	Books, Writers, On-line Adventure Games	TRS	3/12	TBBS	Boulder	Jim Burt
Photo Tech	781-1079	TRS 80 / HAM / Video / Camera	TRS	3/12/24	TBBS	Englewood	Jim Gerritz
PSINet	985-2634	Parapsychology / Near Death Experiences	TRS	3/12	TBBS	Denver	William Tedder
Alpha BBS/Intercomex	367-1935	Enter ALPHA - Ham Radio/Space Topics	Unix Mini	3/12	UNaXcess	Denver	Cyro Lord/Robert Brumley
Temple of Doom	771-9523	INFO NEEDED	unknown	3/12	???	Englewood	???
GLOBAL Information	286-7914	Fee Subscription / Software Database	VAX	3/12	Custom	Denver	Jim Comstock
Discordian Society	969-8195			12/24			Steven Crandall

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Chris Anderson
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